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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,709	09/27/2001	Tomoyuki Akiyama	011272	1627

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EXAMINER	
SINGH, DALZID E	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/963,709	AKIYAMA, TOMOYUKI	
	Examiner	Art Unit	
	Dalzid Singh	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-12* is/are allowed.

6)☒ Claim(s) *1-4 and 6-9* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al (US Patent No. 5,926,297).

Regarding claim 6, as discussed above Ishikawa et al disclose optical communication system comprising the steps of:

providing a chirp to each of an optical time-division multiplex signal and an optical clock signal (in col. 5, lines 3-28 and Fig. 1, Ishikawa et al disclose providing chirp to the optical signal); and

detecting a beat component formed between said optical time-division multiplex signal and said optical signal provided with respective chirp (as shown in Fig. 5, it would have been obvious that the receivers detect beat component of the signal by filtering a selective frequency).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Akiyama et al (US Patent No. 6,661,974).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 8, Ishikawa et al disclose an optical time-division multiplex signal processing apparatus, shown in Fig. 72, comprising:

a first optical dispersion part (91a) supplied with an optical time-division multiplex signal and causing an optical dispersion therein;

a second optical dispersion part (91b) causing an optical dispersion therein;

a plurality of optical detectors (PD) each coupled optically to said first and second optical dispersion parts, each of said optical detectors receiving said optical time-division multiplex signal in a superposed state;

a plurality of band-pass filters (BPF) each provided in correspondence to one of said plurality of optical detectors, each of said band-pass filters filtering out an output signal of said optical detector corresponding thereto; and

a plurality of envelop detectors each provided in correspondence to one of said plurality of band-pass filters, wherein said plurality of band-pass filters have mutually different band-pass characteristics (in Fig. 47B, Ishikawa et al shows eye diagram of the signal, therefore, it would have been obvious that the there is an envelop detector to detect maximum and minimum of the signal).

Furthermore, in optical time-division multiplexed (OTDM) system it is well known that there exist clock signal transmitted along with the OTDM signal in order to provide synchronization.

Regarding claim 9, the filters as shown in Fig. 72 are provided to filter a particular frequency such as beat frequency.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US Patent No. 5,926,297).

Regarding claim 1, Ishikawa et al disclose an optical communication system, comprising:

an optical detector (59), said optical detector detecting optical time-division multiplex signal and clock signal (in Fig. 5, Ishikawa et al show photodetector (PD) to detect the optical time-division signal and the clock signal; in col. 5, lines 3-28 Ishikawa et al disclose the transmission of OTDM signal and clock signal, which will be detected by the detector); and

a filter connected to an output terminal of said optical detector, said filter filtering out an electric signal of a desired frequency band from an output electric signal of said optical detector (Fig. 5 shows filter (62)).

Ishikawa et al disclose the transmission of optical time-division multiplex signal and clock signal and differ from the claimed invention in that Ishikawa et al do not specifically disclose optical dispersion part supplied with optical time-division multiplex signal and optical clock signal and providing optical dispersion to the optical time-division multiplex signal and optical clock signal. However, in col. 1, lines 59-67, Ishikawa et al disclose that most of transmission lines are dispersion fiber. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to transmit the OTDM signal and the clock signal to transmission lines such as dispersion fiber. One of ordinary skill in the art would have been motivated to do this in order to compensate for dispersion.

7. Claims 2-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US Patent No. 5,926,297) in view of prior art Fig. 2 discloses by applicant.

Regarding claim 2, Ishikawa et al disclose providing OTDM signal and clock signal and differ form the claimed invention in that Ishikawa et al do not specifically disclose that the dispersion part comprise of a second input end to which an optical clock signal is supplied. However, the clock signal can be coupled to another end of the coupler as suggested by Fig. 2 of the prior art. For example, a second input end could be coupled prior to the dispersion part (91a) to receive the clock signal so that the dispersion part is able to receive both clock signal and the OTDM signal.

Regarding claim 3, Ishikawa et al disclose that the dispersion medium is selected from any of a single-mode optical fiber, a diffraction grating and a prism (col. 1, lines 59-67, Ishikawa et al disclose that the dispersion is selected from dispersion shifted fiber or dispersion compensated fiber).

Regarding claim 4, as discussed above, the combination of Ishikawa et al and the prior art of Fig. 2 shows clock signal is transmitted along with OTDM signal and differ from the claimed invention in that the combination does not specifically disclose the optical coupler includes a depolarization element at said second input end. However, it would have been obvious to an artisan of ordinary skill in the art provide to provide depolarization element to the second input end. One of ordinary skill in the art would have been motivated to do this in order to reduce polarization dispersion of the signal.

Regarding claim 7, Ishikawa et al disclose an optical transmission system, comprising:

an optical detector (59), said optical detector detecting optical time-division multiplex signal and clock signal (in Fig. 5, Ishikawa et al show photodetector (PD) to detect the optical time-division signal and the clock signal; in col. 5, lines 3-28 Ishikawa et al disclose the transmission of OTDM signal and clock signal, which will be detected by the detector);

a filter connected to an output terminal of said optical detector, said filter filtering out an electric signal of a desired frequency band from an output electric signal of said optical detector (Fig. 5 shows filter (62)); and,

an envelope detector supplied with an output signal of said filter (in Figs. 6 and 7A-7D, Ishikawa et al shows graphs of various optical signal relative to power level, therefore, it would have been obvious that the there is an envelop detector to detect maximum and minimum of the signal).

Allowable Subject Matter

8. Claims 10-12 are allowed.

9. The following is an examiner's statement of reasons for allowance:

Claim 10 is allowed because the prior art US Patent No. 6,661,974 to Akiyama et al do not teach or fairly disclose plurality of optical delay elements each coupled to said second optical dispersion part, each of said plurality of optical delay elements inducing a delay in an optical clock signal supplied thereto from said second optical dispersion part.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-4 and 6-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
September 1, 2005
David Singh